

## REMARKS

Paragraphs one through nine of the above referenced Office Action state that claims 1-14 are rejected as being unpatentable over Russell (U.S. Patent No. 5,648,175) in view of Akwani (U.S. Patent Application Publication No. 2002/0154878 A1). Applicants respectfully traverse.

Applicants point out that embodiments of the claimed invention are directed towards a method of depositing a top clad layer for an optical waveguide of a planar lightwave circuit. Independent claims 1 and 8 recite the formation of a GeBPSG top clad layer for an optical waveguide structure of a planar lightwave circuit is fabricated such that the top clad layer comprises doped silica glass, wherein the dopant includes Ge (Germanium), P (Phosphorus), and B (Boron). This top clad layer is fabricated specifically to prevent/reduce the formation of crystals within the layer.

Independent claims 1 and 8 have been amended to more particularly point out the crystallization limitations. In depositing a top clad layer for the optical waveguide, three separate doping gasses (e.g.,  $\text{GeH}_4$ ,  $\text{PH}_3$ , and  $\text{B}_2\text{H}_6$ ) are added during the PECVD (plasma enhanced chemical vapor deposition) process to make Ge, P and B doped silica glass (GeBPSG). The ratio of the Ge, P, and B dopants is configured to reduce the formation of crystallization areas within the top clad layer and maintain a constant refractive index within the top clad layer across an anneal temperature range.

Applicants point out that these limitations are not shown by the cited combination. Accordingly, Applicants respectively assert that the present invention as recited in claims 1-14 is not rendered obvious within the meaning of 35 U.S.C. Section 103.


### CONCLUSION

Applicants respectfully assert that all remaining claims (claims 1-14) are in condition for allowance and Applicants earnestly solicit such action from the Examiner.

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application. Please charge any additional fees or apply any credits to our PTO deposit account number: 23-0085.

Respectfully submitted,  
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